

Abstract

A locking connector system includes a first body having a rotatable collar mounted thereon and a second body configured to mate with the first body, including one or more components configured to control the breakaway force of the first and second bodies. The first and second bodies include telescopingly engaged body portions and axially mating contacts. The connector system further includes an annular collar encircling the telescoping body portions and rotatively held on the first body and a spring inside the collar. The ends of the spring are confined between the first body and the collar so as yieldingly to resist rotation of the collar relative to the first body. Axially aligned tabs are provided on the collar and the second body for latching the first body and the second body together through a predetermined range of forces. The tabs include opposed flaring cam surfaces, which cause the collar to rotate relative to the second body as the first and second body are telescoped to a mated contact position and at least one tab includes an angled back surface. The cam surfaces guide the collar tab around the body tab, and the coiled spring yields as the collar is rotated by the cam tabs during contact mating to allow the collar tab to slide past the body tab. The spring then rotates the collar tab to a latching position axially behind the body tab, thereby locking the connector bodies in mated contact position.